

AMENDMENTS TO THE CLAIMS

10/519106  
DT01 Rec'd PCT/PTC 23 DEC 2004

This listing of claims will replace all prior versions and listings of claims in the application:

Claims 1-6. (Canceled)

7. (Currently Amended) A method for the treatment and/or prevention of a chronic disease, ~~characterized by~~ which comprises administering to a mammal an effective amount of an EDG-2 antagonist.

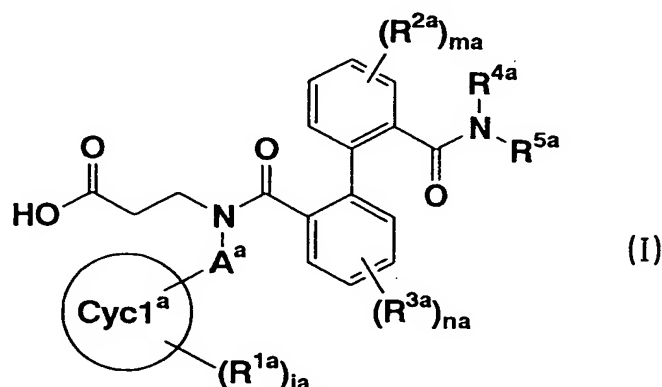
Claim 8. (Canceled)

9. (Original) A remedy and/or preventive of a chronic disease, comprising an EDG-2 antagonist in combination with one or more selected from LPA receptor antagonist, anti-androgenergic agent,  $\alpha 1$  receptor blocker or  $5\alpha$ -reductase inhibitor.

10. (New) The method according to claim 7, wherein the chronic disease is chronic asthma, glomerular nephritis, obesity, prostate hyperplasia, a disease induced by the progress of arteriosclerosis, rheumatoid or atopic dermatitis.

11. (New) The method according to claim 10, wherein the chronic disease is prostate hyperplasia.

12. (New) The method according to claim 7, wherein the EDG -2 antagonist is a  $\beta$ -alanine derivative of formula (I)



wherein  $A^a$  is, (1) C1-6 alkylene, (2) C2-6 alkenylene, or (3) C2-6 alkynylene, wherein  $A^a$  may be substituted with 1-3 of C1-4 alkyl,

Cyc1<sup>a</sup> is, (1) C3-15 carboring, or (2) 3-15 membered heteroring having 1-4 of nitrogen, 1-2 of oxygen and/or 1-2 of sulfur,

R<sup>1a</sup> is (1) C1-4 alkyl, (2) halogen, (3) cyano, (4) trihalomethyl, (5) -OR<sup>6a</sup>, (6) -SR<sup>7a</sup>, (7) -NR<sup>8a</sup>R<sup>9a</sup>, (8) nitro, (9) -COOR<sup>10a</sup>, (10) -CONR<sup>11a</sup>R<sup>12a</sup>, (11) -NR<sup>13a</sup>COR<sup>14a</sup>, (12) -SO<sub>2</sub>NR<sup>15a</sup>R<sup>16a</sup>, (13) -NR<sup>17a</sup>SO<sub>2</sub>R<sup>18a</sup>, (14) -S(O)R<sup>19a</sup>, or (15) -SO<sub>2</sub>R<sup>20a</sup>,

R<sup>6a</sup>, R<sup>7a</sup>, R<sup>8a</sup>, R<sup>9a</sup>, R<sup>10a</sup>, R<sup>11a</sup>, R<sup>12a</sup>, R<sup>13a</sup>, R<sup>14a</sup>, R<sup>15a</sup>, R<sup>16a</sup>, R<sup>17a</sup>, R<sup>18a</sup>, R<sup>19a</sup> and R<sup>20a</sup> are each independently, (1) hydrogen, or (2) C1-4 alkyl,

R<sup>2a</sup> and R<sup>3a</sup> are each independently, (1) C1-4 alkyl, (2) C1-4 alkoxy, or (3) halogen,

R<sup>4a</sup> and R<sup>5a</sup> are each independently, (1) hydrogen, (2) C1-4 alkyl, (3) C2-4 alkenyl, (4) C2-4 alkynyl, (5) C1-4 alkyl substituted with -OR<sup>21a</sup>, (6) C1-4 alkyl substituted with -NR<sup>22a</sup>R<sup>23a</sup> or



R<sup>4a</sup> and R<sup>5a</sup> are taken together with the nitrogen to which they are attached to form a 3-15 membered mono-, bi- or tri-cyclic heteroring, wherein the heteroring represents at least one nitrogen and it may be substituted with C1-4 alkyl substituted with -OR<sup>25a</sup>,

R<sup>21a</sup>, R<sup>22a</sup>, R<sup>23a</sup> and R<sup>25a</sup> are each independently, (1) hydrogen, (2) C1-4 alkyl, (3) C2-6 acyl, or (4) trihaloacetyl,

E<sup>a</sup> is (1) a bond, (2) C1-6 alkylene, (3) C2-6 alkenylene, or (4) C2-6 alkynylene, wherein E<sup>a</sup> may be substituted with 1-3 of (1) C1-4alkyl, or (2) C1-4 alkyl substituted with -OR<sup>26a</sup>,

R<sup>26a</sup> is (1) hydrogen, (2) C1-4 alkyl, (3) C2-6 acyl, or (4) trihaloacetyl, Cyc2<sup>a</sup> is (1) C3-15 carboring, or (2) 3-15 membered heteroring having 1-4 of nitrogen, 1-2 of oxygen and/or 1-2 of sulfur,

R<sup>24a</sup> is (1) C1-4 alkyl, (2) halogen, (3) cyano, (4) trihalomethyl, (5) -OR<sup>27a</sup>, (6) -SR<sup>28a</sup>, (7) -NR<sup>29a</sup>R<sup>30a</sup>, (8) nitro, (9) -COOR<sup>31a</sup>, (10) -CONR<sup>32a</sup>R<sup>33a</sup>, (11) -NR<sup>34a</sup>COR<sup>35a</sup>, (12) -SO<sub>2</sub>NR<sup>36a</sup>R<sup>37a</sup>, (13) -NR<sup>38a</sup>SO<sub>2</sub>R<sup>39a</sup>, (14) -S(O)R<sup>40a</sup>, or (15) -SO<sub>2</sub>R<sup>41a</sup>,

R<sup>27a</sup>, R<sup>28a</sup>, R<sup>29a</sup>, R<sup>30a</sup>, R<sup>31a</sup>, R<sup>32a</sup>, R<sup>33a</sup>, R<sup>34a</sup>, R<sup>35a</sup>, R<sup>36a</sup>, R<sup>37a</sup>, R<sup>38a</sup>, R<sup>39a</sup>, R<sup>40a</sup> and R<sup>41a</sup> are each independently (1) hydrogen, or (2) C1-4 alkyl,

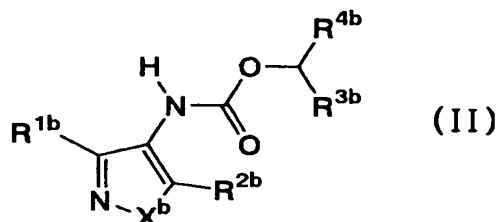
ia is 0 or an integer of 1 to 5, ma is 0 or an integer of 1 to 4, and

na is 0 or an integer of 1 to 4, pa is 0 or an integer of 1 to 5, and

wherein when ia is 2 or more, R<sup>1a</sup>'s are the same or different,

when  $m_a$  is 2 or more,  $R^{2a}$ 's are the same or different,  
when  $n_a$  is 2 or more,  $R^{3a}$ 's are the same or different, and  
when  $p_a$  is 2 or more, they are the same or different, or  
a prodrug thereof or a salt thereof.

13. (New) The method according to claim 7, wherein the EDG -2 antagonist is a compound of formula (II)



wherein  $R^{1b}$  is C1-20 alkyl optionally having substituent(s), aryl, heteroring, alkyloxy, aryloxy, alkylthio, arylthio, or halogen,

$R^{2b}$  is alkyl optionally having substituent(s), aryl, heteroring, alkyloxy, aryloxy or halogen,

$R^{3b}$  is hydrogen, lower alkyl or halogenated alkyl,

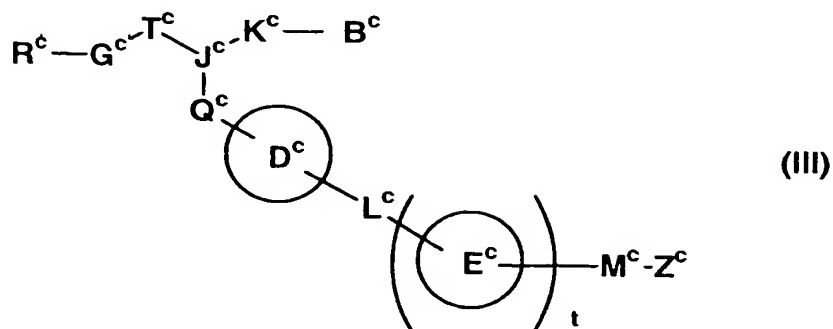
$R^{4b}$  is a group selected from (a) phenyl, aryl or heteroring optionally having substituent(s), (b) substituted or unsubstituted alkyl, and (c) substituted or unsubstituted alkenyl, and

$X^b$  is oxygen or sulfur, and

wherein  $R^{3b}$  and  $R^{4b}$  may be taken together with the carbon to which they are attached to form a 5-10 membered ring, and

when  $R^{3b}$  is hydrogen,  $R^{4b}$  is not methyl, or  
a salt thereof.

14. (New) The method according to claim 7, wherein the EDG -2 antagonist is a compound of formula (III)



wherein  $R^c$  is optionally substituted aliphatic hydrocarbon or a ring group optionally having substituent(s),

$G^c$  is a bond or a spacer having a main chain of 1 to 8 atoms,

$T^c$  is  $-\text{CH}_2-$  or a spacer having a main chain of 1 atom having a hydrogen bond-accepting group optionally having substituent(s),

$J^c$  is nitrogen or carbon,

$B^c$  is optionally substituted aliphatic hydrocarbon or a ring group optionally having substituent(s),

$K^c$  is (1) a bond or (2) a spacer having a main chain of 1 to 8 atoms which may form a ring together with the substituent of the ring group represented by  $R^c$ , ring  $D^c$  or the substituent of the ring  $D^c$ ,

$Q^c$  is (1) a bond or (2) a spacer having a main chain of 1 to 8 atoms which may form a ring together with the ring group represented by  $R^c$ , a substituent of the ring group represented by  $R^c$ , or  $K^c$ ,

ring  $D^c$  is a ring optionally having more substituent(s),

$L^c$  is a bond or a spacer having a main chain of 1 to 3 atoms,

ring  $E^c$  is, a ring group optionally having substituent(s),

$M^c$  is a bond or a spacer having a main chain of 1 to 8 atoms,

$Z^c$  is an acidic group, and

$t$  is 0 or 1, or

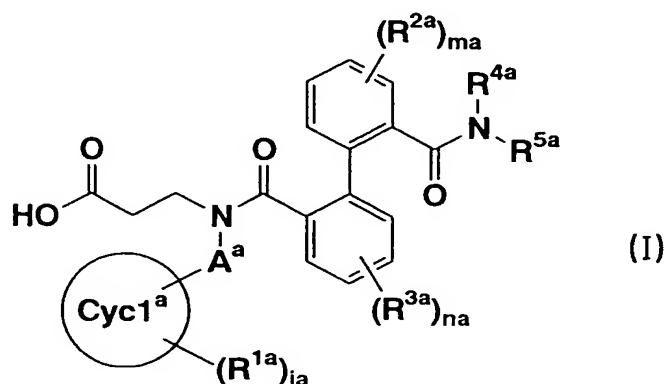
a salt thereof.

15. (New) The method according to claim 7, wherein one or more selected from LPA receptor antagonist, anti-androenergetic agent,  $\alpha 1$  receptor blocker or  $5\alpha$ -reductase inhibitor is administered in combination with the EDG-2 antagonist.

16. (New) The remedy and/or preventive according to claim 9, wherein the chronic disease is chronic asthma, glomerular nephritis, obesity, prostate hyperplasia, a disease induced by the progress of arteriosclerosis, rheumatoid or atopic dermatitis.

17. (New) The remedy and/or preventive according to claim 16, wherein the chronic disease is prostate hyperplasia.

18. (New) The remedy and/or preventive according to claim 9, wherein the EDG-2 antagonist is a  $\beta$ -alanine derivative of formula (I)



wherein  $A^a$  is, (1) C1-6 alkylene, (2) C2-6 alkenylene, or (3) C2-6 alkynylene, wherein  $A^a$  may be substituted with 1-3 of C1-4 alkyl,

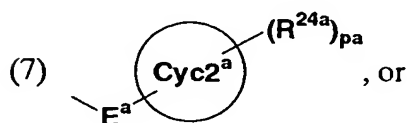
$Cyc1^a$  is, (1) C3-15 carboring, or (2) 3-15 membered heteroring having 1-4 of nitrogen, 1-2 of oxygen and/or 1-2 of sulfur,

$R^{1a}$  is (1) C1-4 alkyl, (2) halogen, (3) cyano, (4) trihalomethyl, (5)  $-OR^{6a}$ , (6)  $-SR^{7a}$ , (7)  $-NR^{8a}R^{9a}$ , (8) nitro, (9)  $-COOR^{10a}$ , (10)  $-CONR^{11a}R^{12a}$ , (11)  $-NR^{13a}COR^{14a}$ , (12)  $-SO_2NR^{15a}R^{16a}$ , (13)  $-NR^{17a}SO_2R^{18a}$ , (14)  $-S(O)R^{19a}$ , or (15)  $-SO_2R^{20a}$ ,

$R^{6a}$ ,  $R^{7a}$ ,  $R^{8a}$ ,  $R^{9a}$ ,  $R^{10a}$ ,  $R^{11a}$ ,  $R^{12a}$ ,  $R^{13a}$ ,  $R^{14a}$ ,  $R^{15a}$ ,  $R^{16a}$ ,  $R^{17a}$ ,  $R^{18a}$ ,  $R^{19a}$  and  $R^{20a}$  are each independently, (1) hydrogen, or (2) C1-4 alkyl,

$R^{2a}$  and  $R^{3a}$  are each independently, (1) C1-4 alkyl, (2) C1-4 alkoxy, or (3) halogen,

$R^{4a}$  and  $R^{5a}$  are each independently, (1) hydrogen, (2) C1-4 alkyl, (3) C2-4 alkenyl, (4) C2-4 alkynyl, (5) C1-4 alkyl substituted with  $-OR^{21a}$ , (6) C1-4 alkyl substituted with  $-NR^{22a}R^{23a}$  or



$R^{4a}$  and  $R^{5a}$  are taken together with the nitrogen to which they are attached to form a 3-15 membered mono-, bi- or tri-cyclic heteroring, wherein the heteroring represents at least one nitrogen and it may be substituted with C1-4 alkyl substituted with  $-OR^{25a}$ ,

$R^{21a}$ ,  $R^{22a}$ ,  $R^{23a}$  and  $R^{25a}$  are each independently, (1) hydrogen, (2) C1-4 alkyl, (3) C2-6 acyl, or (4) trihaloacetyl,

$E^a$  is (1) a bond, (2) C1-6 alkylene, (3) C2-6 alkenylene, or (4) C2-6 alkynylene, wherein  $E^a$  may be substituted with 1-3 of (1) C1-4alkyl, or (2) C1-4 alkyl substituted with  $-OR^{26a}$ ,

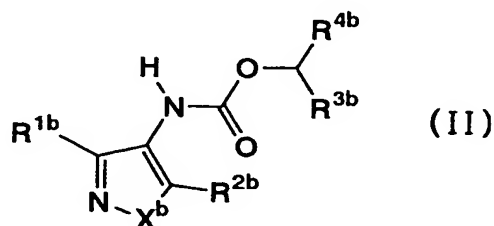
$R^{26a}$  is (1) hydrogen, (2) C1-4 alkyl, (3) C2-6 acyl, or (4) trihaloacetyl,  $Cyc2^a$  is (1) C3-15 carboring, or (2) 3-15 membered heteroring having 1-4 of nitrogen, 1-2 of oxygen and/or 1-2 of sulfur,

$R^{24a}$  is (1) C1-4 alkyl, (2) halogen, (3) cyano, (4) trihalomethyl, (5)  $-OR^{27a}$ , (6)  $-SR^{28a}$ , (7)  $-NR^{29a}R^{30a}$ , (8) nitro, (9)  $-COOR^{31a}$ , (10)  $-CONR^{32a}R^{33a}$ , (11)  $-NR^{34a}COR^{35a}$ , (12)  $-SO_2NR^{36a}R^{37a}$ , (13)  $-NR^{38a}SO_2R^{39a}$ , (14)  $-S(O)R^{40a}$ , or (15)  $-SO_2R^{41a}$ ,

$R^{27a}$ ,  $R^{28a}$ ,  $R^{29a}$ ,  $R^{30a}$ ,  $R^{31a}$ ,  $R^{32a}$ ,  $R^{33a}$ ,  $R^{34a}$ ,  $R^{35a}$ ,  $R^{36a}$ ,  $R^{37a}$ ,  $R^{38a}$ ,  $R^{39a}$ ,  $R^{40a}$  and  $R^{41a}$  are each independently (1) hydrogen, or (2) C1-4 alkyl,

$ia$  is 0 or an integer of 1 to 5,  $ma$  is 0 or an integer of 1 to 4, and  $na$  is 0 or an integer of 1 to 4,  $pa$  is 0 or an integer of 1 to 5, and wherein when  $ia$  is 2 or more,  $R^{1a}$ 's are the same or different, when  $ma$  is 2 or more,  $R^{2a}$ 's are the same or different, when  $na$  is 2 or more,  $R^{3a}$ 's are the same or different, and when  $pa$  is 2 or more, they are the same or different, or a prodrug thereof or a salt thereof.

19. (New) The remedy and/or preventive according to claim 9, wherein the EDG-2 antagonist is a compound of formula (II)



wherein  $R^{1b}$  is C1-20 alkyl optionally having substituent(s), aryl, heteroring, alkyloxy, aryloxy, alkylthio, arylthio, or halogen,

$R^{2b}$  is alkyl optionally having substituent(s), aryl, heteroring, alkyloxy, aryloxy or halogen,

$R^{3b}$  is hydrogen, lower alkyl or halogenated alkyl,

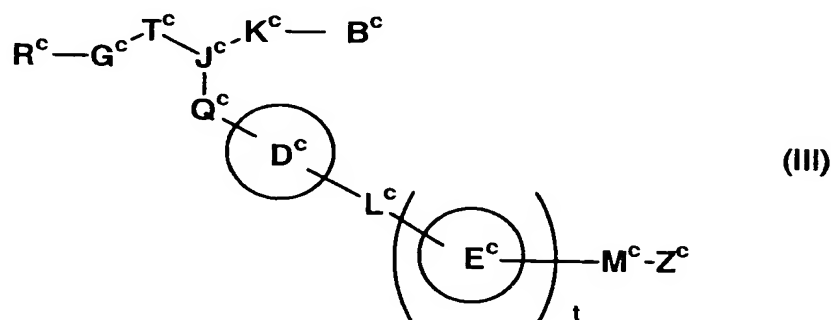
$R^{4b}$  is a group selected from (a) phenyl, aryl or heteroring optionally having substituent(s), (b) substituted or unsubstituted alkyl, and (c) substituted or unsubstituted alkenyl, and

$X^b$  is oxygen or sulfur, and

wherein  $R^{3b}$  and  $R^{4b}$  may be taken together with the carbon to which they are attached to form a 5-10 membered ring, and

when  $R^{3b}$  is hydrogen,  $R^{4b}$  is not methyl, or a salt thereof.

20. (New) The remedy and/or preventive according to claim 9, wherein the EDG-2 antagonist is a compound of formula (III)



wherein  $R^c$  is optionally substituted aliphatic hydrocarbon or a ring group optionally having substituent(s),

$G^c$  is a bond or a spacer having a main chain of 1 to 8 atoms,

$T^c$  is  $-CH_2-$  or a spacer having a main chain of 1 atom having a hydrogen bond-accepting group optionally having substituent(s),

$J^c$  is nitrogen or carbon,

$B^c$  is optionally substituted aliphatic hydrocarbon or a ring group optionally having substituent(s),

$K^c$  is (1) a bond or (2) a spacer having a main chain of 1 to 8 atoms which may form a ring together with the substituent of the ring group represented by  $R^c$ , ring  $D^c$  or the substituent of the ring  $D^c$ ,

$Q^c$  is (1) a bond or (2) a spacer having a main chain of 1 to 8 atoms which may form a ring together with the ring group represented by  $R^c$ , a substituent of the ring group represented by  $R^c$ , or  $K^c$ ,

ring  $D^c$  is a ring optionally having more substituent(s),

$L^c$  is a bond or a spacer having a main chain of 1 to 3 atoms,

ring  $E^c$  is, a ring group optionally having substituent(s),

$M^c$  is a bond or a spacer having a main chain of 1 to 8 atoms,

$Z^c$  is an acidic group, and

$t$  is 0 or 1, or

a salt thereof.